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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/438,652	11/12/1999	NOBUO SASAKI	SCEI-16.677	9667

26304 7590 11/17/2004

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EXAMINER	
GOOD JOHNSON, MOTILEWA	
ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/438,652	SASAKI ET AL.	
	Examiner	Art Unit	
	Motilewa A. Good-Johnson	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the following communications: application, filed on 11/12/1999; IDS, paper #4, filed on 06/06/2000; IDS, paper #5, filed on 08/21/2000; Amendment A, filed 04/17/2003; Amendment B, filed 11/18/2003; RCE, filed 12/23/2003; Amendment, filed 08/19/2004.

2. Claims 1-11 are pending in this application. Claims 1 and 6 are independent claims.

3. The present title of this application is "Image Generation Method and Image Generation Device" (as originally filed).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barad et al., *Real-Time Procedural Texturing Techniques Using MMX*, GamaNetwork, May 1, 1998, (numbered by Examiner pages 1-20).

Regarding claim 1, Barad discloses an image generation method for generating a two-dimensional image by texture mapping to three-dimensional polygons including

textures to be mapped to generate an overall pattern on a polygon, and modulation textures, comprising the of: adding each texture that has been mapped by each modulation texture; and displaying on a display apparatus the generated two-dimensional image. (an original texture, figure 3.1 scaled by an amplitude modification factor and added together, page 3, to create a final image texture)

However, it is noted that Barad fails to disclose multiplication of the each texture that has been mapped by each modulation texture.

It would have been obvious to one of ordinary skill in the art at the time of the invention that addition is a form of multiplication and further that multiplication is a reduced form of addition.

Therefore it would have been obvious to implement multiplication of the textures with the modulated textures to reduce computation time, which is a well known desire in the art.

Regarding claim 2, Barad discloses wherein in said multiplying step an amplitude is made smaller with increasing distance from the vicinity of a viewpoint. (the amplitude modification factor of smaller factors, page 3, and further discloses the noise function is assigned to each location in space, page 2, which Examiner interprets as a viewpoint vicinity)

Regarding claim 3, Barad discloses repetition period of textures and a repetition period of modulation textures are offset from each other. (Perlin's noise and iterations of applying the noise as octaves, which Examiner interprets as a period, and the number of octaves as generated by the octave equation, page 2)

Regarding claim 4, Barad discloses modulation texture is set to higher spatial frequencies than those of said texture, with color information removed from said texture. (calculating a wood texture with different shade of brown and black modeled by an equation and using a random offset, turbulence value, to calculate the final color, pages 3-4)

Regarding claim 5, Barad discloses modulation texture consists of different patterns from said texture. (using scaled amplitude modification factors to generate scaled noise functions, page 2)

Regarding claim 6, Barad discloses an image generation device for generating a two-dimensional image by texture mapping . . . comprising: a memory means that stores textures to be mapped to generate an overall pattern . . . (the marble texturing algorithm inputting an initial texture into a texture map, i.e. storage, page 7) modulation textures used to amplitude-modulate the patterns generated by mapping of the textures; (scaling the amplitude by varying amounts and varying the magnification of the scene for each image and summing the images together, page 2) and a display means that displays the generated two-dimensional image.

However, it is noted that Barad fails to disclose multiplying means multiplying each texture that has been mapped to generate the overall pattern on the polygon by each modulation texture.

It would have been obvious to one of ordinary skill in the art at the time of the invention that addition is a form of multiplication and further that multiplication is a reduced form of addition.

Therefore it would have been obvious to implement multiplication of the textures with the modulated textures to reduce computation time, which is a well known desire in the art.

Regarding claims 7-10, they are rejected based upon similar rational as above claims 2-5.

Regarding claim 11, Barad discloses a pixel value of a modulation texture represents the intensity for multiplying to the pixel value of an image drawn using said texture. (a pixel table for storing and calculating the DDU values, page 10)

Response to Arguments

6. Applicant's arguments, see pages 8-9, filed 08/19/2004, with respect to the rejection(s)of claim(s) 1-11 under 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Barad under 103.

Applicant argues that Barad fails to disclose textures that have been mapped are multiplied by modulation textures. Barad discloses that the textures are multiplied by a modulation and to generate the final texture the modulated textures that have been mapped are summed together. Applicant argues that Barad discloses modulating a height map and not using a basic texture. Barad discloses the height map represents colors in an image and is therefore a basic texture.

Applicant argues that Barad fails to disclose textures that have been mapped multiplied by a modulation texture. Barad discloses on page 2, a image treated as a

height map, which the Examiner interprets as a mapped texture, and further discloses scaling the amplitude of the height of the hills by varying amounts, thus modulating the height map, and further discloses summing the images together, which Examiner interprets as a mapped texture multiplied by a modulation texture.

It is furthermore the interpretation of the Examiner that multiplication constitutes a form of addition, and therefore it is the Examiner's opinion that it would have been obvious to include multiplication of the mapped texture by each modulation texture by a reduced computation of the summation of the original image, which is a well known achievement of one of ordinary skill in the art. Barad discloses Perlin noise, i.e. a mapped texture, and output image which is the image with noise functions scaled, i.e. modulated, and summed together, which Examiner interprets as a form of multiplication of a texture mapped by modulated textures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj

MICHAEL RAZAVI
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